

Date: Monday, 10/23/2006 12:05:44 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : CROSSTUBE EXTRUSION (206B)
Job Number : 29116	
Estimate Number : 10026	
P.O. Number : N/A	Part Number : D6003102
This Issue : 10/23/2006 S.O. No. : N/A	Drawing Number : D6003 REV A
Prsht Rev. : NC	Project Number : N/A
First Issue : N/A Type : RMA	Drawing Revision : A
Previous Run : 25663	Material : N/A
Written By : <u> </u>	Due Date : 1/30/2007 Qty: 19 Um: Each
Checked & Approved By : <u> </u>	
Comment : Est Rev:B 00.12.06 Added: Issue P/O EC	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0

PG

PURCHASING



Comment: PURCHASING

Issue P/O 2339

a) Extrude as per Dwg D6003

b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9
or QQ-A-200/11) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strenght=66 ksi

e) Material certification required

2.0

D6003102P

Crosstube



Comment: Qty.: 1.0000 Each(s)/Unit Total : 19.0000 Each(s)
 Crosstube

3.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

4.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6003

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☐ No ☒ DQA: HP Date: 07/03/07
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/23/2006 12:05:45 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION (206B)

Job Number: 29116

Part Number: D6003102

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

Handwritten: PA w

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

Handwritten: Mat-26 En 07/03/26

7.0

QC21

FINAL INSPECTION/W/O RELEASE



Handwritten: (21)

Comment: FINAL INSPECTION/W/O RELEASE

Handwritten: 07/03/27

Job Completion



Handwritten: U 07-03-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

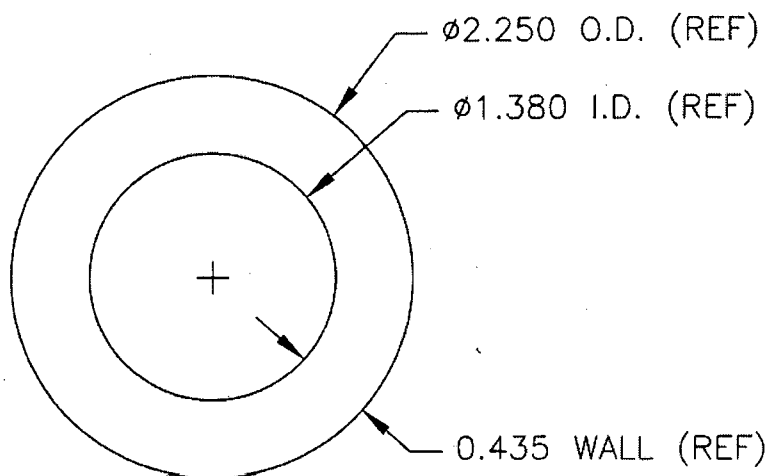
NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6003	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *[Signature]*



NOTES

- 1) D6003-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 102" LONG TUBE: D6003-102

SHOP COPY
RETURN TO:
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *29116*

- 2) MATERIAL: 2.250 OD x 0.435 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.044 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

Copyright © 2000 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

order confirmation

21531

page: 2
date: 11.02.2006
customer: 40980

Tubes protected with corrosion protective oil
Tubes line marked
Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit value	USD	delivery
002	25,000	PC	213,48	PC	5.337,00	March 16, 2007

AWU article: 16468 / Tariff no. 76082081
Customer article: D6002-115 2.250 X 0.250 X 115
product: TUBES / seamless extruded / EN AW-7075 / round
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	2,250 INCH Tol.	+0,012	-0,012
tol. for mean OD		+0,006	-0,006
inner diameter:	1,750 INCH		
wall thickness:	0,250 INCH Tol.	+0,025	-0,025
fixed length	115,000 INCH Tol.	+0,125	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455
straightness 0,01 INCH / 1 FEET / RMS outer 25
tol. on quantity +15 % -15 %
2.250" OD 0.250" Wall, 115" lengths
Part Number D6002-115 crosstube
Surface Finish max. RMS 25
Tolerances per ASTM B210 and drawing No. D6002
Tubes protected with corrosion protective oil
Tubes line marked
Packing: seaworthy wooden cases

Handwritten signature
2/3/23

item	quantity	unitprice	USD	unit value	USD	delivery
003	19,000	PC	296,44	PC	5.632,36	March 16, 2007

AWU article: 19795 / Tariff no. 76082081
Customer article: D6003-102 2.250 X 0.435 X 102
product: TUBES / seamless extruded / EN AW-7075 / round
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	2,250 INCH Tol.	+0,012	-0,012
tol. for mean OD		+0,006	-0,006
inner diameter:	1,380 INCH		
wall thickness:	0,435 INCH Tol.	+0,044	-0,044
fixed length	102,000 INCH Tol.	+0,125	

inspection cert. acc. to EN10204/3.1 / RM 531 / Rp0,2: 455
straightness 0,01 INCH / 1 FEET / RMS outer 25
tol. on quantity +15 % -15 %
2.250" OD 0.435" Wall, 102" lengths
Part Number D6003-102 crosstube
Surface Finish max. RMS 25

**ALUnna**

Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Dart Aerospace Ltd.

Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 135/07

Cert No.: / No. du certificat:

Bestellnummer: PO.00002329

Order No. / No. de commande

Auftrag: 21531/3

Our Reference/Notre Reference:

Produkt: Rohre nahtlos gepresst

Product / Produit: Tubes seamless extruded

Spezifikation: AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace D6003

Specification:

Werkstoff: 7075

Alloy/Alliage:

Zustand: T 6511

Temper/État

Abmessung: 2,250 INCH x 1,380 INCH x 0,435 INCH x 102,000 INCH

Size / Dimension

D6003-102 2.250 x 0.435 x 102

Kennzeichnung: ALUnna - Cert No.135/07 - 7075 - T 6511 - Cast No. 80006 - AMS - QQA 200/11 - 2.250" OD X 0.435" Wall - Heat No. 912/01 - Lot 21531/3-1 - PO: 00002339

Marking/Marquage:

Lieferung

pcs.

lbs

Country of Manufacture: Germany

Delivered Material / Matériel délivré:

21

542

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min.	max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
					1,2		2,1	0,18	5,1						
			0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
80006			0,096	0,178	1,37	0,031	2,48	0,183	5,82	0,037	0,004	0,014	0,001	0,001	0,0001

Hydrogen content: 0,10

ccm/100 g Al

Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	85,985	80,185	10,0		169	912/01 - 21 pcs.

RMS: outside 25 - max. 11,5 µ"

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Results:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

Packinglist ALUnna AG

Customer PO	PO. 00002339
ALUnna ref. no.	21531/3
Date:	02.15.07

We hereby declare that the wooden packing material are totally free from bark and apparently free from live plant pests

Boxmarking:

Dart Aerospace PC. 00002339
D 5003-102 Made in Germany
Dest. Hawkesbury Ont. , Canada

[illegible]